

REMARKS

Claim Rejections - 35 U.S.C. §112

The Examiner has rejected Claims 1-21 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The claims 1-21 have been amended to more particularly point out and distinctly claim the subject matter that Applicant regards as the invention.

Claim Rejections - 35 U.S.C. §102 and 35 U.S.C. §103

The Examiner has rejected claims 1-8 and 12-15 under 35 USC 102(b) as being anticipated by Yang (U.S. Patent No. 5,656,556). The Examiner has rejected claims 1-6, 12-15 and 21 under 35 USC 102(b) as being anticipated by Liu et al. (U.S. Patent No. 5,094,984). The Examiner has rejected claims 1-23 under 35 USC 103(a) as being unpatentable over Yieh et al. (5,994,209). Claims 9-11 and 16-23 are rejected under 35 USC 103(a) as being unpatentable over Yang ('556) in view of Yieh et al. ('209). Claims 7-11 and 16-23 are rejected under 35 USC 103(a) as being unpatentable over Liu et al. ('984) in view of Yieh et al. ('209). The Applicant respectfully traverses. The cited references do not anticipate or render obvious the Applicant's claims rejected by the Examiner. In particular, the cited references do not teach the elements of independent claims 1 and 12 of reflowing the borophosphosilicate glass layer by placing the borophosphosilicate glass layer in a rapid thermal processing chamber having an oxygen ambient and a first chamber temperature in a range of approximately 300°C to 650°C, flowing hydrogen into the rapid thermal processing chamber after placing the borophosphosilicate glass layer in the rapid thermal processing chamber to provide a wet ambient formed by an in-situ reaction of hydrogen and oxygen, and then increasing the first chamber temperature to a second chamber temperature in a range of approximately 600°C to 1050°C at a rate in a range of approximately 20°C per second to 40°C per second.

In contrast, Yang merely teaches reflowing a borophosphosilicate glass layer by annealing at a temperature of about 800°C and 850°C. Liu merely teaches reflowing a borophosphosilicate glass layer by annealing at a temperature of between 700°C and 900°C. Yieh teaches reflow of a borophosphosilicate glass layer within the same chamber where the deposition of the borophosphosilicate glass layer was deposited at a temperature between 750°C and 950°C. The cited references individually and in combination fail to teach reflowing within a rapid thermal processing chamber, ramping from a first temperature to a second temperature at a specified rate, or providing a wet ambient within the chamber formed by an in-situ reaction of hydrogen and oxygen. Therefore, because dependent claims 7-11 depend upon and incorporate the limitations of independent claim 1, and dependent claims 13-22 depend upon and incorporate the limitations of independent claim 12, the Applicant respectfully submits that claims 1-23 are not anticipated or rendered obvious by the cited references.

Petition for Extension of Time Pursuant to 37 C.F.R. 1.136(a)

Applicant respectfully petitions pursuant to 37 CFR 1.136(a) for three months extension of time to file this response to the Office Action mailed April 1, 2003. The extended period is set to expire on October 1, 2003. A check in the amount of \$950.00 is enclosed to cover the fee for three months extension of time.

Pursuant to 37 CFR 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 CFR 1.16 and 1.17, to Deposit Account No. 02-2666.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 10/1, 2003

Heather M. Molleur
Heather M. Molleur
Reg. No. 50,432

Patent Counsel
Legal Affairs Dept.
APPLIED MATERIALS, INC.
P.O. Box 450A
Santa Clara, CA 95052

Telephone inquiries to:
Heather M. Molleur
(408) 720-8300